

ATCC

Catalogue of Recombinant DNA Materials

2nd edition, 1991

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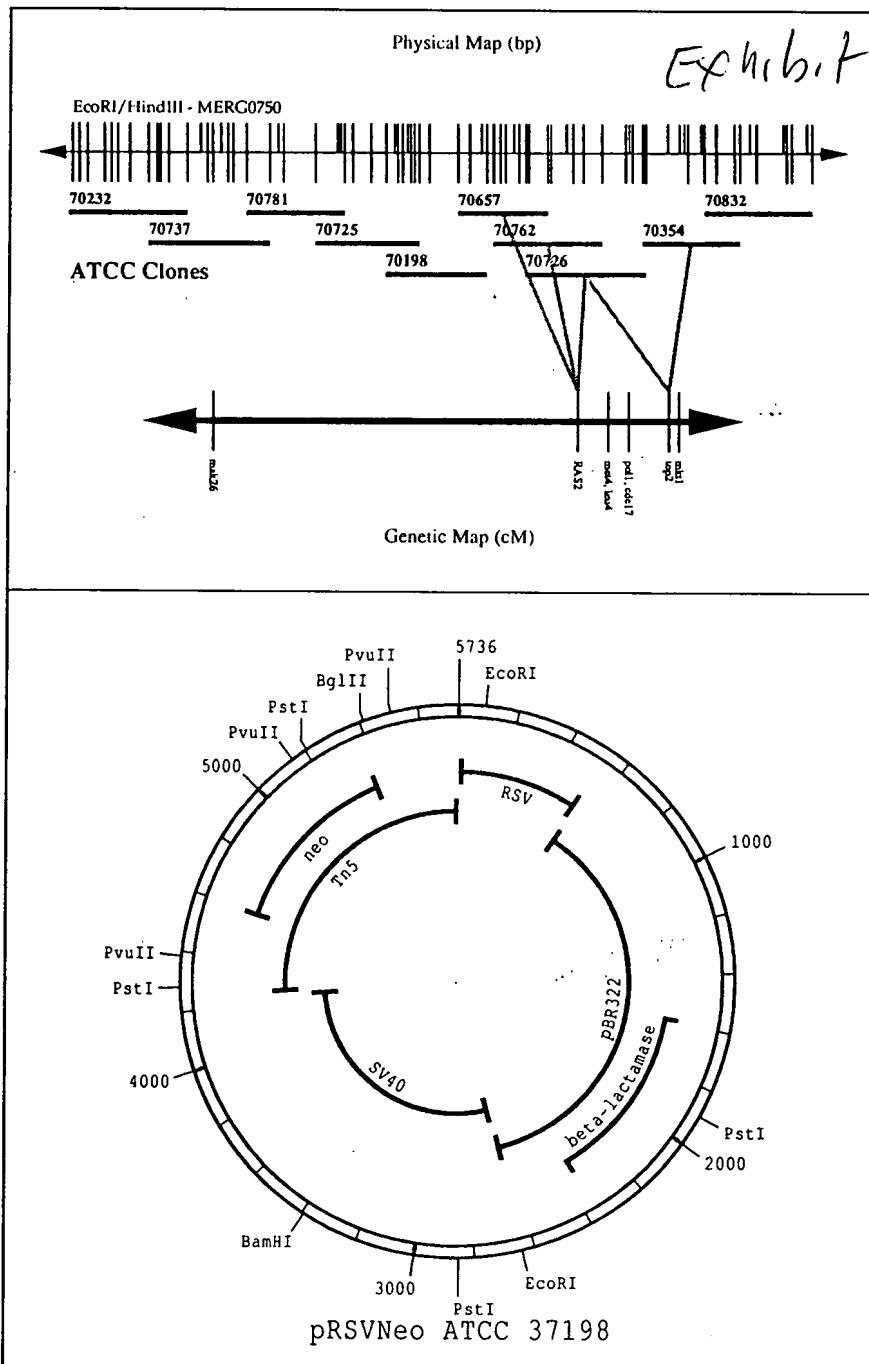
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American
Type Culture
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VECTORS

removed. Gene (Amst.) 41: 337-342, 1986. (Medium 1236 37C) **Shipped:** in freeze-dried *Escherichia coli* JM101.

pBGS131 (plasmid)

37445 B.G. Spratt. Construction: pBR322, Tn903, M13tg131, bacteriophage f1 ori. Size(kb): 4.4. Marker(s): Kan^r. Cloning sites: EcoRI Smal SstI EcoRV SphI KpnI XbaI HindIII BamHI AccI HincII SalI PstI BglII. Replicon(s): pMB1, f1. Contains MCS. Kanamycin-resistant analog of pEMBL. The duplicate HindIII, Smal and AccI sites have been removed. Gene (Amst.) 41: 337-342, 1986. (Medium 1236 37C) **Shipped:** in freeze-dried *Escherichia coli* JM101.

pBLA 11 (plasmid)

39788 Bio-technology General Corporation. Marker(s): Tet^r. Promoter(s): λ PL. Contains the ribosomal binding site of the β -lacatamase gene. U.S. Patent No. 4,742,004 dated May 3, 1988. Note: This material is cited in a U.S. and/or other Patent and may not be used to infringe the patent claims. (Medium 1273 37C) **Shipped:** in freeze-dried *Escherichia coli*.

pBLCAT2 (plasmid)

37527 B. Luckow. Construction: pUC18, SV40, cml, herpes simplex virus *tk* promoter. Size(kb): 4.5. Marker(s): Amp^r. Cloning sites: HindIII SphI (PstI) SalI XbaI BamHI BglII XhoI ClaI Smal KpnI SstI (EcoRI). Replicon(s): pMB1. Promoter(s): HSV *tk*. Contains MCS. Developed to simplify construction of hybrid CAT genes. Nucleic Acids Res. 15: 5490, 1987. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli*.

pBLCAT3 (plasmid)

37528 B. Luckow. Construction: pUC18, SV40, cml. Size(kb): 4.34. Marker(s): Amp^r. Cloning sites: HindIII SphI PstI SalI XbaI BamHI BglII XhoI ClaI Smal KpnI SstI (EcoRI). Replicon(s): pMB1. Contains MCS. Developed to simplify construction of hybrid CAT genes. Nucleic Acids Res. 15: 5490, 1987. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli*.

pBR313 (plasmid)

37018 H. Boyer. Other names: NRRL B-14220. Size(kb): 9.6. Marker(s): Amp^r, Tet^r. Cloning sites: EcoRI Smal HpaI HindIII BamHI SalI. Replicon(s): pMB1. A general purpose plasmid vector. Gene (Amst.) 2: 75-93, 1977. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.

pBR322 (plasmid)

31344 Genentech, Inc. Size(kb): 4.363. Marker(s): Amp^r, Tet^r. Cloning sites: EcoRI ClaI HindIII EcoRV BamHI SphI SalI XbaI NruI Aval BglI PvuII Tth111I NdeI PstI PvuI Scal AatII. Replicon(s): pMB1. A general purpose plasmid vector. U.S. Patent No. 4,366,246 dated Dec. 28, 1982; U.S. Patent No. 4,342,832 dated Aug. 3, 1982. Note: This material is cited in a U.S. and/or other Patent and may not be used to infringe the patent claims. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.

37017 Preceptrol[®] culture. H. Boyer. Construction: pBR313. Size(kb): 4.363. Marker(s): Amp^r, Tet^r. Cloning sites: EcoRI ClaI HindIII EcoRV BamHI SphI SalI XbaI NruI Aval BglI PvuII Tth111I NdeI PstI PvuI Scal AatII. Replicon(s): pMB1. A general purpose plasmid vector. Gene (Amst.) 2: 95-113, 1977. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.

pBR327 (plasmid)

37516 E.M. Lederberg. Size(kb): 3.3. Marker(s): Amp^r, Tet^r. Cloning sites: AatII Aval ClaI EcoRI HgiEII HindIII BamHI EcoRV NruI PstI PvuI SalI Scal SphI XbaI XbaII. Replicon(s): pMB1. A general purpose plasmid vector. Derived from pBR322 by deleting sequences between nt 1430 (Aval) and 2519. The *bom* or *Mob* site has been deleted. Recomb. DNA Tech. Bull. 2: 1980; Nature (Lond.) 283: 216-218, 1980; Gene (Amst.) 13: 25-35, 1981; *ibid.*, 50: 3-40, 1986. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* GM21.

pBR328 (plasmid)

37517 E.M. Lederberg. Construction: pBR327 *ori*, pBR325 cml. Size(kb): 4.9. Marker(s): Amp^r, Cml^r, Tet^r. Cloning sites: AatII AsuII Aval ClaI HgiEII HindIII Tth111I BamHI EcoRI EcoRV BglI BamHI EcoRI EcoRV NcoI NruI PstI PvuI PvuII SalI SphI XbaI. Replicon(s): pMB1. A general purpose plasmid vector. Contains a 482 bp inverted

duplication. Constructed from the *PstI/BamHI* fragment of pBR327 containing the replication origin and the *PstI/BamHI* fragment of pBR325 containing the *cml* gene. Gene (Amst.) 9: 287-305, 1980; *ibid.*, 50: 3-40, 1986. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.

pBR329 (plasmid)

37264 R.L. Rodriguez. Construction: pBR327, pBR328 837 bp *cml*. Size(kb): 4.2. Marker(s): Amp^r, Cml^r, Tet^r. Cloning sites: AatII AsuII Aval ClaI HgiEII HindIII Tth111I BglI BamHI EcoRI EcoRV NcoI NruI PstI PvuI SalI SphI XbaI XbaII. Replicon(s): pMB1. A general purpose plasmid vector. This plasmid does not carry the inverted duplication region found in pBR328. Gene (Amst.) 17: 79-89, 1982; Rodriguez, R.L.; Tait, R.C. Recombinant DNA techniques. Reading, MA: Addison-Wesley; 1983. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.

pBRH1 (plasmid)

37070 R.L. Rodriguez. Construction: pBR316. Size(kb): 7.7. Marker(s): Amp^r. Cloning sites: EcoRI. Replicon(s): pMB1. Promoter cloning plasmid vector using expression of tetracycline resistance for selection. Constructed by inserting an oligonucleotide containing an *EcoRI* site into the *HindIII* site of pBR316, inactivating the *tet* promoter. Rodriguez, R.L.; Denhardt, D.T., eds. Vectors: A survey of molecular cloning vectors and their uses. Boston: Butterworth; 1988:pp. 153-177; Gene (Amst.) 7: 271-288, 1979. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.

pBRH3B (plasmid)

37072 R.L. Rodriguez. Construction: pBR316. Size(kb): 7.7. Marker(s): Amp^r. Cloning sites: EcoRI. Replicon(s): pMB1. Promoter cloning plasmid vector using expression of tetracycline resistance for selection. Constructed by inserting an oligonucleotide containing an *EcoRI* site into the *HindIII* site of pBR316, inactivating the *tet* promoter. Resistant to low levels of tetracycline without an insert and can be used to clone only strong promoters. Rodriguez, R.L.; Denhardt, D.T., eds. Vectors: A survey of molecular cloning vectors and their uses. Boston: Butterworth; 1988:pp. 153-177; Gene (Amst.) 7: 271-288, 1979. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.

pBRH4 (plasmid)

37071 R.L. Rodriguez. Construction: pBR322. Size(kb): 4. Marker(s): Amp^r. Cloning sites: EcoRI. Replicon(s): pMB1. Promoter cloning plasmid vector using expression of tetracycline resistance for selection. Gene (Amst.) 7: 271-288, 1979. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.

pBRM (plasmid)

37283 J.P. White. Construction: pBR322. Size(kb): 2. Marker(s): Amp^r. Cloning sites: BamHI EcoRI. Replicon(s): pMB1. Proc. Natl. Acad. Sci. USA 79: 233-237, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli*.

pBRN3 (plasmid)

37137 D.B. Wilson. Construction: pBR322. Size(kb): 2. Marker(s): Amp^r. Cloning sites: HindIII EcoRI BglI PstI. Replicon(s): pMB1. A general purpose plasmid vector useful for construction of shuttle vectors for animal cells. Deletion includes poison sequences near the origin of replication. A pBR322 deletion from near bp 50 to near bp 2400. Plasmid 7: 287-289, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* K-12 SK2284.

pBRN/B (plasmid)

37348 M.M. Haltiner. Construction: pBR322. Size(kb): 3.3. Marker(s): Amp^r. Cloning sites: BglII NruI PstI EcoRI SalI BamHI ClaI EcoRV HindIII NdeI PvuI SnaI SphI Tth111I XbaI. Replicon(s): pMB1. Plasmid vector for use in generating nested sets of deletion mutations. Contains a linker cassette sequence containing *NruI* and *BglII* sites adjacent to each other. Nucleic Acids Res. 13: 1015-1025, 1985. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* HB101.

pBRN/S (plasmid)

37347 M.M. Haltiner. Construction: pBR322. Size(kb): 3.3. Marker(s): Amp^r. Cloning sites: SacI NruI PstI EcoRI SalI BamHI ClaI EcoRV HindIII NdeI PvuI SnaI SphI Tth111I

VECTORS

pCM4 (plasmid)

37174 R.L. Rodriguez. Construction: pBR327, Tn9 *cml*. Size(kb): 4.2. Marker(s): Amp^r. Replicon(s): pMB1. Contains promoterless CAT gene flanked by *Bam*HI sites which can be used to construct other vectors. Gene (Amst.) 20: 305-316, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.

pCM7 (plasmid)

37173 R.L. Rodriguez. Construction: pBR327, Tn9 *cml*. Size(kb): 4.2. Marker(s): Amp^r. Replicon(s): pMB1. Contains promoterless CAT gene flanked by *Hind*III sites which can be used to construct other vectors. Gene (Amst.) 20: 305-316, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.

pcos1EMBL (cosmid)

37568 A. Craig. Construction: R6K, pcos4EMBL. Size(kb): 6.3. Marker(s): Kan^r, Tet^r. Cloning sites: *Bam*HI. Replicon(s): R6K. One of a family of cosmid vectors (ATCC 37568-37571) containing a R6K origin. Contains one λ *cos* site. Gene (Amst.) 57: 229-237, 1987. (Medium 1273 37C) **Shipped:** in freeze-dried *Escherichia coli* DH1.

pcos2EMBL (cosmid)

37569 A. Craig. Construction: pcos1EMBL. Size(kb): 6.1. Marker(s): Kan^r, Tet^r. Cloning sites: *Bam*HI. Replicon(s): R6K. One of a family of cosmid vectors (ATCC 37568-37571) containing a R6K origin. Differs from pcos1EMBL (ATCC 37568) in having 2 λ *cos* sites and a deletion in the region of the Kan^r gene. Gene (Amst.) 57: 229-237, 1987. (Medium 1273 37C) **Shipped:** in freeze-dried *Escherichia coli* DH1.

pcos5EMBL (cosmid)

37570 A. Craig. Construction: pcos3EMBL. Size(kb): 6. Marker(s): Kan^r. Cloning sites: *Bam*HI. Replicon(s): R6K. Contains MCS. One of a family of cosmid vectors (ATCC 37568-37571) containing a R6K origin. Differs from pcos3EMBL in having *Not*I sites flanking the *Bam*HI cloning site. Gene (Amst.) 57: 229-237, 1987. (Medium 1236 37C) **Shipped:** in freeze-dried *Escherichia coli* DH1.

pcos6EMBL (cosmid)

37571 A. Craig. Construction: pcos5EMBL, Pi. Size(kb): 6. Marker(s): Kan^r. Cloning sites: *Bam*HI. Replicon(s): R6K. Contains MCS. One of a family of cosmid vectors (ATCC 37568-37571) containing a mutated R6K origin for increased copy number. Has increased copy number over pcos5EMBL (ATCC 37570). Gene (Amst.) 57: 229-237, 1987. (Medium 1236 37C) **Shipped:** in freeze-dried *Escherichia coli* DH1.

pCR1 (plasmid)

37135 D.R. Helinski. Construction: ColE1. Size(kb): 11.4. Marker(s): Kan^r. Cloning sites: *Eco*RI *Hind*III. Replicon(s): ColE1. A general purpose plasmid vector. Science (Washington, DC) 196: 172-174, 1977. (Medium 1236 37C) **Shipped:** in freeze-dried *Escherichia coli* C600.

PC3 (plasmid)

39142 Cetus Corporation. Construction: pEW27, pOP9. Marker(s): Amp^r, Tet^r. Cloning sites: *Eco*RI *Pvu*II *Pst*I *Pvu*I *Cl*I *Hind*III *Sph*I *Sal*I *Bam*HI *Nru*I. Replicon(s): ColE1. Gives high copy number at high temperature. Contains the replication origin for high copy number at high temperature of pEW27 (ATCC 37124). pOP9 was constructed by cloning the *Eco*RI/*Pvu*II fragment containing the origin of pOP6 into pBR322. This should NOT be grown over 30C; it is best between 28-30C. U.S. Patent No. 4,677,064 dated June 30, 1987; Proc. Natl. Acad. Sci. USA 79: 3570-3574, 1982. Note: This material is cited in a U.S. and/or other Patent and may not be used to infringe the patent claims. (Medium 1227 28C) **Shipped:** in freeze-dried *Escherichia coli* MM294.

pD553 (plasmid)

37284 D.J. Drahos. Construction: pKO3, λ . Marker(s): Amp^r. Cloning sites: *Eco*RI *Hind*III *Hpa*I. Replicon(s): pMB1. Terminator: λ *t*₁I. Plasmid containing antiterminating λ gene N and *nut L* site. Gene (Amst.) 16: 261-274, 1981. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* C600 *galK*⁻.

pDG141 (plasmid)

39588 Cetus Corporation. Other names: CMCC 1966. Construction: pBR322. Size(kb): 2.5. Marker(s): Amp^r. Cloning sites: *Sac*I. Replicon(s): pMB1. Promoter(s): *trp*.

Expression vector with a tryptophan promoter-operator and ribosome binding site operably linked with an ATG start codon. U.S. Patent No. 4,889,818 dated Dec. 26, 1989; U.S. Patent No. 4,711,845 dated Dec. 12, 1987; U.S. Patent No. 4,784,949 dated Nov. 15, 1988. Note: This material is cited in a U.S. and/or other Patent and may not be used to infringe the patent claims. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli*.

pDM1 (plasmid)

37357 D. Mead. Construction: bacteriophage f1, pAT153. Size(kb): 3.8. Marker(s): Amp^r. Replicon(s): pMB1. Contains an easily isolated f1 intergenic region for conversion of any plasmid to an ssDNA vector (use *Sal*I plus *Acc*I plus *Hinc*II). Nucleic Acids Res. 13: 1103-1118, 1985. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* NM522.

pDR42 (plasmid)

37180 G.N. Bennett. Construction: pBR322, *Escherichia coli trp*. Size(kb): 4.4. Marker(s): Amp^r, Tet^r. Cloning sites: *Pst*I *Eco*RI *Hind*III *Bam*HI *Sal*I. Replicon(s): pMB1. A pBR322 derivative with increased tetracycline resistance and increased fusaric acid sensitivity. Hybrid *trp-tet* promoter formed by insertion of partial *trp* promoter at the *Cl*I site. Plasmid 7: 290-293, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* RR1.

pDR540 (plasmid)

37282 G.N. Bennett. Construction: pKO1, *Escherichia coli trp-lac* fusion promoter *tac*. Marker(s): Amp^r, *galK*⁻. Replicon(s): pMB1. Promoter(s): *tac*. Contains an easily purifiable *trp-lac* hybrid promoter which can be used to construct expression vectors. Unstable when transformed into C600 *galK*⁻. Gene (Amst.) 20: 231-243, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* JM103.

pEA300 (plasmid)

37181 E. Amann. Construction: pKK84-1, *ptrpH1*. Size(kb): 5.5. Marker(s): Amp^r. Cloning sites: *Eco*RI *Cl*I *Hind*III *Bam*HI *Pvu*II. Replicon(s): pMB1. Promoter(s): *trp*. Terminator: *rrnB*. For construction of -35 *trp* expression vectors. Constructed by inserting a 192 bp fragment containing the -35 sequence of the *trp* promoter into the *Cl*I site of pKK84-1. Contains two terminators tandemly arranged. Maniatis, T. et al., eds. Molecular cloning: a laboratory manual. Cold Spring Harbor, NY: CSHL; 1982:pp. 413-446; Gene (Amst.) 25: 167-178, 1983. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* W3110 *lacI*^q.

pEMBL8⁺ (phagemid)

37396 G. Cesareni. Construction: pUC8, bacteriophage f1. Size(kb): 3.99. Marker(s): Amp^r. Cloning sites: *Eco*RI *Ava*I *Sma*I *Xma*I *Bam*HI *Sal*I *Acc*I *Pst*I *Hind*II *Hind*III *Cl*I *Eco*B *Nae*I. Replicon(s): pMB1, f1. Contains MCS. ssDNA-producing plasmid with polylinker in *lacZ*. Nucleic Acids Res. 11: 1645-1655, 1983. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* K-12 71/18.

pEMBL8⁻ (plasmid)

37397 G. Cesareni. Construction: pUC8, bacteriophage f1. Size(kb): 3.99. Marker(s): Amp^r. Cloning sites: *Eco*RI *Ava*I *Sma*I *Xma*I *Bam*HI *Sal*I *Acc*I *Pst*I *Hind*II *Hind*III *Cl*I *Eco*B *Nae*I. Replicon(s): pMB1, f1. Contains MCS. ssDNA-producing plasmid with polylinker in *lacZ*. Nucleic Acids Res. 11: 1645-1655, 1983. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* K-12 71/18.

pEMBL9 (plasmid)

37395 G. Cesareni. Construction: pUC9, pEMBL8, *lacZ*. Size(kb): 3.99. Marker(s): Amp^r. Cloning sites: *Eco*RI *Sma*I *Bam*HI *Sal*I *Ava*I *Pst*I *Hind*III. Contains MCS. ssDNA-producing plasmid with polylinker in *lacZ*. Nucleic Acids Res. 11: 1645-1655, 1983; Gene (Amst.) 35: 27-32, 1985. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* K-12 71/18.

pEMBL18-Not (Sma-) (plasmid)

37573 A. Craig. Construction: pEMBL18. Size(kb): 3.9. Marker(s): Amp^r. Cloning sites: *Eco*RI *Sac*I *Kpn*I *Not*I *Bam*HI *Sal*I *Pst*I *Sph*I *Hind*III. Replicon(s): pMB1. Promoter(s): *lac*. Contains MCS. General purpose vector modified to include a *Not*I site to facilitate library construction and chromosome walking. *Sma*I site in polylinker of pEMBL18 changed to a *Not*I site. Gene (Amst.) 57: 229-237, 1987. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* JM101.

VECTORS

pLA7 (plasmid)

37281 I.R. Beacham. Construction: pCB1, pBR322. Size(kb): 4.1. Marker(s): Amp^r, ush. Cloning sites: *BclI* *Aval*. Replicon(s): pMB1. A positive selection vector for cloning *Sau3A*-generated DNA fragments. Growth of the plasmid in a *dam*-host is necessary for *BclI* cleavage. Gene (Amst.) 27: 323-325, 1984. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* GM33.

pLG200 (plasmid)

37113 L.P. Guarente. Construction: pBR322, *Escherichia coli*. Size(kb): 8.9. Marker(s): Amp^r. Cloning sites: *HindIII*. Replicon(s): pMB1. Promoter(s): *lacUV5*. Can be used to construct a plasmid which directs the expression of a cloned gene under the control of the *lacUV5* promoter. Cell 20: 543-553, 1980. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* LG90.

pLG338 (plasmid)

37130 N.G. Stoker. Construction: pSC105. Size(kb): 7.3. Marker(s): Kan^r, Tet^r. Cloning sites: *KpnI* *EcoRI* *XbaI* *SmaI* *BamHI* *HincII* *SalI*. Replicon(s): pSC101. A low copy number (6-8 per chromosome), general purpose plasmid vector. Gene (Amst.) 18: 335-341, 1982. (Medium 1273 37C) **Shipped:** in freeze-dried *Escherichia coli* C600.

pLG339 (plasmid)

37131 N.G. Stoker. Construction: pSC105. Size(kb): 6.3. Marker(s): Kan^r, Tet^r. Cloning sites: *PvuII* *EcoRI* *XbaI* *SmaI* *BamHI* *SphI* *HincII* *SalI*. Replicon(s): pSC101. A low copy number (6-8 per chromosome), general purpose plasmid vector. Gene (Amst.) 18: 335-341, 1982. (Medium 1273 37C) **Shipped:** in freeze-dried *Escherichia coli* C600.

pLG400 (plasmid)

37114 L.P. Guarente. Construction: pBR322, *Escherichia coli*. Size(kb): 8.9. Marker(s): Amp^r. Cloning sites: *HindIII* *BamHI*. Replicon(s): pMB1. Promoter(s): *lacUV5*. Can be used to construct a plasmid which directs the expression of a cloned gene under the control of the *lacUV5* promoter. Cell 20: 543-553, 1980. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* LG90.

pLKC480 (plasmid)

37594 A.A. Tiedman. Construction: A *lacZY* plasmid, Tn5. Size(kb): 9.9. Marker(s): Amp^r, Kan^r. Cloning sites: *EcoRI* *BamHI* *SalI* *HindIII*. Replicon(s): pMB1. Contains MCS. One of a series of *lacZY* fusion vectors (ATCC 37594-37596) that allow fusions in one of three reading frames and retain flanking DNA for homologous recombination into the *Escherichia coli* genome. The 6.3 kb *lacZY*-Kan^r cassette is released with *SmaI*. A 1.3 kb *HindIII*/*NruI* Kan^r fragment (with *HindIII* site filled in) was inserted at the *NruI* site of a *lacZY* fusion plasmid. Nucleic Acids Res. 16: 3587, 1988. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* TX528.

pLKC481 (plasmid)

37595 A.A. Tiedman. Construction: A *lacZY* plasmid, Tn5. Size(kb): 9.9. Marker(s): Amp^r, Kan^r. Cloning sites: *EcoRI* *BamHI* *SalI* *HindIII*. Replicon(s): pMB1. Contains MCS. One of a series of *lacZY* fusion vectors (ATCC 37594-37596) that allow fusions in one of three reading frames and contain flanking DNA for homologous recombination into the *Escherichia coli* genome. The 6.3 kb *lacZY*-Kan^r cassette is released with *SmaI*. A 1.3 kb *HindIII*/*NruI* Kan^r fragment (with *HindIII* site filled in) was inserted at the *NruI* site of a *lacZY* fusion plasmid. Nucleic Acids Res. 16: 3587, 1988. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli*.

pLKC482 (plasmid)

37596 A.A. Tiedman. Construction: A *lacZY* plasmid, Tn5. Size(kb): 9.9. Marker(s): Amp^r, Kan^r. Cloning sites: *EcoRI* *BamHI* *SalI* *HindIII*. Replicon(s): pMB1. Contains MCS. One of a series of *lacZY* fusion vectors (ATCC 37594-37596) that allow fusions in one of three reading frames and retain flanking DNA for homologous recombination into the *Escherichia coli* genome. The 6.3 kb *lacZY*-Kan^r cassette is released with *SmaI*. A 1.3 kb *HindIII*/*NruI* Kan^r fragment (with *HindIII* site filled in) was inserted at the *NruI* site of a *lacZY* fusion plasmid. Nucleic Acids Res. 16: 3587, 1988. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* TX528.

pLM0.8 (plasmid)

39604 Actagen, Inc. Marker(s): Amp^r. Note: This material is cited in a U.S. and/or other Patent and may not be used to infringe the patent claims. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* HB101.

pLV57 (plasmid)

37177 D. O'Connor. Construction: pBR325, NTP14m07(Ts). Size(kb): 6.1. Marker(s): Amp^r, Cml^r, EcoRIM(Ts)r⁺. Cloning sites: *HindIII* *BglII* *AvaI* *EcoRI*. Replicon(s): pMB1. Positive selection cloning vector employing *EcoRI* restriction-modification system. Gene (Amst.) 20: 219-229, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* HB101.

pLV59 (plasmid)

37178 D. O'Connor. Construction: pACYC184, NTP14m(Ts). Size(kb): 6.3. Marker(s): Cml^r, EcoRIM(Ts)r⁺, Tet^r. Cloning sites: *HindIII* *BglII* *PstI* *BamHI* *EcoRI* *SalI* *HincII* *HincII*. Replicon(s): p15A. Positive selection cloning vector employing *EcoRI* restriction system. Gene (Amst.) 20: 219-229, 1982. (Medium 1675 37C) **Shipped:** in freeze-dried *Escherichia coli* HB101.

pMAM17 (plasmid)

37325 B. Polisky. Construction: pPLc236, ColE1 rcp. Size(kb): 3.01. Marker(s): Amp^r. Cloning sites: *EcoRI* *BamHI* *HindIII* *PvuII*. Replicon(s): ColE1. Promoter(s): *λPL*. Expression vector that permits positive selection of DNA inserts; also permits high level temperature-induced expression of inserted DNA as fusion protein. Gene (Amst.) 31: 155-164, 1984. (Medium 1227 30C) **Shipped:** in freeze-dried *Escherichia coli* K-12 *ΔHI* *Δtrp*.

pMB9 (plasmid)

37019 H. Boyer ← F. Bolivar. Construction: pMB8, pSC101. Size(kb): 5.2. Marker(s): Tet^r. Cloning sites: *BamHI* *HindIII* *SalI* *EcoRI*. Replicon(s): pMB1. A general purpose plasmid vector. Gene (Amst.) 2: 75-93, 1977. (Medium 1273 37C) **Shipped:** in freeze-dried *Escherichia coli* HB101.

pMF7 (cosmid)

37117 M. Feiss. Construction: pBR322, λ. Size(kb): 6.8. Marker(s): Amp^r. Cloning sites: *EcoRI* *SalI*. Replicon(s): pMB1. A general purpose cosmid vector. Gene (Amst.) 17: 123-130, 1982; Proc. Natl. Acad. Sci. USA 79: 3498-3502, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* K-12 IC202.

pMF517 (cosmid)

37118 M. Feiss. Construction: pBR322, λ. Size(kb): 7.1. Marker(s): Amp^r. Cloning sites: *Clal* *HindIII* *SalI* *PstI* *EcoRI*. Replicon(s): pMB1. A general purpose cosmid vector. Gene (Amst.) 17: 123-130, 1982; Proc. Natl. Acad. Sci. USA 79: 3498-3502, 1982. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* K-12 IC202.

pMH621 (plasmid)

31775 NCI-Frederick Cancer Research Center. Size(kb): 7.6. Marker(s): Amp^r. Cloning sites: *BglII*. Replicon(s): pMB1. Promoter(s): *ompF*. An expression vector for cytoplasmic export of a cloned gene product. Maniatis, T.; et al., eds. Molecular cloning: A laboratory manual. Cold Spring Harbor, NY: CSHL; 1982:pp. 429-430. Note: This material is cited in a U.S. and/or other Patent Application and may not be used to infringe the patent claims. (Medium 1227 37C) **Shipped:** in freeze-dried *Escherichia coli* K-12 MH2000. 40038 NCI-Frederick Cancer Research Center. Size(kb): 7.6. Marker(s): Amp^r. Cloning sites: *BglII*. Replicon(s): pMB1. Promoter(s): *ompF*. An expression vector for cytoplasmic export of cloned gene product by formation of a fusion protein with the *ompF* signal sequence. Requires as host MH3000 (ATCC 35468) for viability and TK 1046 (ATCC 35467) for protein expression. Note: This material is cited in a U.S. and/or other Patent Application and may not be used to infringe the patent claims. **Shipped:** as thawed purified plasmid DNA, supplied by depositor.

pMLB1034 (plasmid)

37222 M.L. Berman. Construction: pMC871, pBR322. Size(kb): 7.2. Marker(s): Amp^r. Cloning sites: *BamHI* *EcoRI* *SmaI*. Replicon(s): pMB1. Contains MCS. For screening promoters by determining β-galactosidase activity (*lacZ*). The cloning sites are 5' to a promoterless β-galactosidase gene. The insert

Exhibit B

EUKARYOTIC GENES CLONED AND EXPRESSED PRIOR TO MARCH 19, 1980

| | Gene | Reference | System |
|---|---|---|---|
| MAMMALIAN GENE: β-GALACTOSIDASE EXPRESSION SYSTEM | | | |
| 1 | human somatostatin | Itakura et al. (1977) | β -gal promoter |
| 2 | chicken ovalbumin | Fraser et al. (1978) Mercereau et al. (1978) | β -gal promoter |
| 3 | mature human insulin | Goeddel et al. (1979a) | β -gal promoter |
| MAMMALIAN GENE: β-LACTAMASE EXPRESSION SYSTEM (Inserted into PstI site of pBR322) | | | |
| 4 | rat preproinsulin | Villa-Komaroff (1978) | bla promoter |
| 5 | mouse dihydrofolate reductase | Chang et al. (1978) | bla promoter |
| 6 | rat pregrowth hormone | Seeburg et al. (1978) | bla promoter |
| MAMMALIAN GENE: <i>TRP D</i> EXPRESSION SYSTEM | | | |
| 7 | human pregrowth hormone | Martial et al. (1979) | <i>trp</i> promoter |
| MAMMALIAN GENE: <i>LAC</i> PROMOTER | | | |
| 8 | human mature growth hormone | Goeddel et al. (1979b) | <i>lac</i> promoter ¹ |
| MAMMALIAN GENE: OTHER | | | |
| 9 | human globin | Wilson et al. (1979) | |
| VIRAL GENE (Genes which are expressed normally by infected eukaryotic hosts) | | | |
| 10 | simian virus 40 t antigen | Roberts et al. (1979) | <i>lac</i> promoter ² |
| 11 | human hepatitis B virus | Burrell et al. (1979) | bla promoter |
| 12 | fowl plague virus | Erntage et al. (1980) | <i>trp</i> promoter Insert at pBR322 HindIII |
| YEAST GENE | | | |
| 13 | Neurospora dehydroquinolinate hydrolase | Vapnek et al. (1977) | Insert at pBR322 HindIII/EcoRI |
| 14 | Saccharomyces <i>His</i> and <i>Leu</i> | Ratzkin et al. (1977) | ColEI plasmid |
| 15 | Saccharomyces galactokinase | Schell et al. (1979) | Insert at pBR322 BamHI |
| 16 | Saccharomyces OMP decarboxylase | Bach et al. (1979) | Insert at pBR322 HindIII |

Key: β -gal = β -galactosidase gene
 bla = β -lactamase gene

trp = tryptophan operon
lac = lactose operon

¹ System subsequently used by Goeddel et al. (Nucleic Acids Research, Vol. 8, No. 18, pp. 4057-4074 (1980)), to express IFN- β .

² System subsequently used by Taniguchi et al. (PNAS, 77:5230-5233 (September 1980)), to express IFN- β .

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4. Villa-Komaroff et al., *PNAS* 75:3727-3731 (August 1978)
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6. Seuberg et al., *Nature*, 276:795-798 (December 21/28, 1978)
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